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EXAMINER

STOREY, WILLIAM C

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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.



## **DETAILED ACTION**

### ***Claim Objections***

1. Claims 1-13 are objected to because of the following informalities: Claims 1, 11, 12 and recite "the change of the attributes of the line object being one of the change of color of the line object, change of line width of the line object and change of both the color and line width of the object." In order for the change to be one of, the examiner suggests changing the wording to "'the change of the attributes of the line object being one of the change of color of the line object, change of line width of the line object, or change of both the color and line width of the object.'" Appropriate correction is required.

2. Claims 1-13 are objected to because of the following informalities: Claims 1, 11, 12 and recite "executing change of the attributes," "the change of the attributes," "with the attributes changed," etc. Because "at least one of the attributes" was mentioned previously, the examiner suggests changing the above similar phrases referring to attributes to "at least one of the attributes." Appropriate correction is required.

### ***Claim Rejections - 35 USC § 101***

3. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

The USPTO "Interim Guidelines for Examination of Patent Applications for Patent Subject Matter Eligibility" (Official Gazette notice of 22 November 2005), Annex IV, reads as follows:

Descriptive material can be characterized as either "functional descriptive material" or "nonfunctional descriptive material." In this context, "functional descriptive material" consists of data structures and computer programs which impart functionality when employed as a computer component. (The definition of "data structure" is "a physical or logical relationship among data elements, designed to support specific data manipulation functions." The New IEEE Standard Dictionary of Electrical and Electronics Terms 308 (5th ed. 1993).) "Nonfunctional descriptive material" includes but is not limited to music, literary works and a compilation or mere arrangement of data.

When functional descriptive material is recorded on some computer-readable medium it becomes structurally and functionally interrelated to the medium and will be statutory in most cases since use of technology permits the function of the descriptive material to be realized. Compare *In re Lowry*, 32 F.3d 1579, 1583-84, 32 USPQ2d 1031, 1035 (Fed. Cir. 1994) (claim to data structure stored on a computer readable medium that increases computer efficiency held statutory) and *Warmerdam*, 33 F.3d at 1360-61, 31 USPQ2d at 1759 (claim to computer having a specific data structure stored in memory held statutory product-by-process claim) with *Warmerdam*, 33 F.3d at 1361, 31 USPQ2d at 1760 (claim to a data structure per se held nonstatutory).

In contrast, a claimed computer-readable medium encoded with a computer program is a computer element which defines structural and functional interrelationships between the computer program and the rest of the computer which permit the computer program's functionality to be realized, and is thus statutory. See *Lowry*, 32 F.3d at 1583-84, 32 USPQ2d at 1035.

Claim(s) 11-12 is/are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter as follows. Claims 11-12 define a program embodying functional descriptive material. However, the claim does not define a "computer-readable medium or computer-readable memory" and is thus non-statutory for that reason (i.e., "When functional descriptive material is recorded on some computer-readable medium it becomes structurally and functionally interrelated to the medium and will be statutory in most cases since use of technology permits the function of the descriptive material to be realized" – Guidelines Annex IV). The scope of the presently claimed invention encompasses products that are not necessarily computer readable, and thus NOT able to impart any functionality of the recited program. The examiner suggests amending the claim(s) to embody the program on "computer-readable medium" or equivalent; assuming the specification does NOT define the computer readable medium as a "signal", "carrier wave", or "transmission medium"

which are deemed non-statutory (refer to “note” below). Any amendment to the claim should be commensurate with its corresponding disclosure.

Note:

“A transitory, propagating signal ... is not a “process, machine, manufacture, or composition of matter.” Those four categories define the explicit scope and reach of subject matter patentable under 35 U.S.C. § 101; thus, such a signal cannot be patentable subject matter.” (*In re Petrus A.C.M. Nuijten*; Fed Cir, 2006-1371, 9/20/2007).

Should the full scope of the claim as properly read in light of the disclosure encompass non-statutory subject matter such as a “signal”, the claim as a whole would be non-statutory. Should the applicant’s specification define or exemplify the computer readable medium or memory (or whatever language applicant chooses to recite a computer readable medium equivalent) as statutory tangible products such as a hard drive, ROM, RAM, etc, **as well as** a non-statutory entity such as a “signal”, “carrier wave”, or “transmission medium”, the examiner suggests amending the claim to include the disclosed tangible computer readable storage media, while at the same time excluding the intangible transitory media such as signals, carrier waves, etc.

### ***Claim Rejections - 35 USC § 102***

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States

only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

5. Claims 1, 3, 4, 9, 11, & 12 are rejected under 35 U.S.C. 102(e) as being anticipated by Ishizuka et al. (US Patent 7200268), hereinafter referred to as Ishizuka.

Regarding claim 1, Ishizuka discloses an image processing device. Ishizuka discloses using PostScript to communicate from a client terminal to a printer through an image processing device, which reads on claimed image forming apparatus that forms an image on the basis of PDL information; as disclosed at column 4, lines 8-21. Ishizuka discloses a fine line image extracting section, which reads on claimed determining means; that extracts a thin line when there is a possibility of blurring or disappearance, which reads on claimed determination means for determining whether the PDL information is a line object that is drawn by a line drawing command; as disclosed at column 4, lines 52-58. Ishizuka discloses the image processing device generating raster data from the image data on the basis of a drawing command, which reads on claimed line drawing command; as disclosed at column 4, lines 9-10. Ishizuka discloses the thin line warning function processing the extracted line when it is at or below a predetermined thickness, which reads on claimed comparison means for comparing, if the determination means determines that the PDL information is a line object that is drawn by a line drawing command, at least one of attributes of the line object that are a width (disclosed), an angle, a line type, hue, saturation, brightness, and an angle of a screen pattern with a threshold; as disclosed at column 4, lines 46-51 and column 5, lines 12-14, 21-23, and 27-29. Ishizuka discloses that if the extraction passes the previous test, the thin line may be converted into a thick line, which reads on

claimed changing means for executing change of the attributes of the line object in accordance with a comparison result of the comparison means, the change of the attributes of the line object being one of the change of color of the line object, change of line width of the line object and change of both the color and line width of the line object; and drawing means for drawing the line object with the line width that is changed by the changing means; as disclosed at column 5, lines 24-27 and 39-40. It is inherent that there be means for performing the operations.

Regarding claim 4, Ishizuka discloses everything as applied above for claim 1. Ishizuka discloses that once the line is found to be at a predetermined thickness or less, the thin line warning function outputs a warning message saying that there is a possibility of blurring, which reads on claimed wherein the comparison means executes a comparison with a threshold that can determine whether the line object is likely to blur when the line object is drawn; as disclosed at column 5, lines 31-35.

Regarding claim 9, Ishizuka discloses everything as applied above for claim 1. As disclosed above, Ishizuka discloses the thin line warning function to determine whether the extracted line is at or less than a threshold and is the kind of line that needs processing responsive that check or whether the extracted line is above the threshold and is the kind of line that does not need processing responsive to that check, which reads on claimed detection means for detecting a kind of the line object, as disclosed above and at figure 2 and column 5, lines 21-29. Ishizuka discloses claimed means for changing the color of the line object, or the line width of the line object, or the color and

line width of the line object, on the basis of a detection result of the detection means, as disclosed column 9, line 67 and column 10, lines 1-4.

Regarding claim 11, claim 11 is rejected upon the same reasoning as applied for claim 1. Changing from an apparatus to a program does not make the claim patentably distinct.

***Claim Rejections - 35 USC § 103***

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 2, 3, 12, and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ishizuka in view of Torpey et al. (US Patent 6753976), hereinafter referred to as Torpey.

Regarding claim 2, Ishizuka discloses everything as applied above. Although Ishizuka did not distinctly disclose determining whether a particular object is a polygon or not, Ishizuka discloses that the fine line image extracting section (which previously has been disclosed as been able to detect a line object from PDL information) may extract line images that are straight lines, circular arcs, or curves of any various shapes.

In a similar field of endeavor, Torpey discloses adaptive pixel management using object type identification. In addition, Torpey discloses classifying objects according to different types. Torpey discloses classifying objects as graphics objects including line art, graphics primitives, and/or geometric data. Torpey also indicates that other object



types may also be defined; as disclosed at column 17, lines 15-17, 26-27, 42-45, and 56-57 and column 3, line 54. As Torpey has specifically shown that image objects may be classified into line art, graphics objects, etc. (which would most usually render shapes (polygons)) and additionally that other object types may be defined, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Ishizuka by specifically providing determining whether a particular object is a polygon or not, as taught by Torpey, for the purpose of adding flexibility and rendering classified objects differently in order to result in a more desirable output image.

Regarding claim 3, Ishizuka discloses everything as applied above for claim 1. Although Ishizuka did not distinctly disclose determining whether a particular object is a polygon or not, Ishizuka discloses that the fine line image extracting section (which previously has been disclosed as been able to detect a line object from PDL information) may extract line images that are straight lines, circular arcs, or curves of any various shapes.

In a similar field of endeavor, Torpey discloses adaptive pixel management using object type identification. In addition, Torpey discloses classifying objects according to different types. Torpey discloses classifying objects as graphics objects including line art, graphics primitives, and/or geometric data. Torpey also indicates that other object types may also be defined; as disclosed at column 17, lines 15-17, 26-27, 42-45, and 56-57 and column 3, line 54. As Torpey has specifically shown that image objects may be classified into line art, graphics objects, etc. (which would most usually render shapes (polygons)) and additionally that other object types may be defined, it would

have been obvious to one of ordinary skill in the art at the time the invention was made to modify Ishizuka by specifically providing determining whether a particular object is a polygon or not, as taught by Torpey, for the purpose of adding flexibility and rendering classified objects differently in order to result in a more desirable output image.

Ishizuka discloses that the fine line image extracting section may extract line images that are straight lines, circular arcs, or curves of any various shapes (as disclosed at column 4, lines 60-62), which shows that the system may extract lines composing a polygon and work with the line width value as previously disclosed by Ishizuka. This, in conjunction with the previously disclosed material, reads on claimed wherein the comparison means compares, if the determination means determines that the PDL information is composed of a polygon, a value of line width of the line object, which is composed of the polygon, with a threshold of the line width.

Regarding claim 12, claim 12 is rejected upon the same reasoning as applied above for claims 1 & 3. Changing from an apparatus to a program does not make the claim patentably distinct.

Regarding claim 13, Ishizuka and Torpey disclose everything as applied above for claim 2. In addition, the claim is rejected based upon similar reasoning applied for claim 3.

8. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ishizuka in view of well known prior art (MPEP 2144.03).

Regarding claim 10, Ishizuka discloses everything claimed, as applied above (see claim 1). Although Ishizuka did not specifically say means for determining whether

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the line object is a color one or a monochromatic one, Ishizuka disclosed means (inherent to be able to perform the process) for counting the amount of color and determining whether element data is black and able to compare values against a threshold to lead to determinations (col. 7, lines 24-40, col. 8, lines 52-57). Providing further support, the examiner takes official notice of the fact that it was well known in the art to provide means for determining whether a line object is a color one or a monochromatic one.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Ishizuka by specifically providing means for determining whether a line object is a color one or a monochromatic one, for the purpose of stopping the system from going to colors that are not needed in a monochromatic print.

Ishizuka discloses that once the line is found to be at a predetermined thickness or less, the thin line warning function outputs a warning message saying that there is a possibility of blurring, which reads on claimed means for determining whether the line object is likely to blur, on the basis of a determination result of the determining means; as disclosed at column 5, lines 31-35.

Ishizuka discloses claimed means for changing the color of the line object, or the line width of the line object, or the color and line width of the line object, on the basis of a detection result of the detection means, if the determining means determines that the line object is likely to blur, as disclosed column 9, line 67 and column 10, lines 1-4, 28-

33 and figure 8. The user may select which of the above-mentioned conversion processes to use after thin line determination check with threshold.

### ***Response to Arguments***

9. Applicant's arguments with respect to the claims have been considered but are moot in view of the new ground(s) of rejection and the cancellation of claims and their limitations.

However, the examiner feels that it would be beneficial to discuss some of the proposals submitted by the applicant in order to clear up any confusion.

Regarding the discussion for claims 1, 11, and 12 (and their dependents), the substance of the applicant's first proposal regarding the claim surrounds the idea that "Ishizuka is completely silent about determining whether the PDL information is a line object that is drawn by a line drawing command." However, the allegation that Ishizuka is completely silent is completely untrue. The examiner points to the previous office action where it was specifically delineated (forgive the pun): "Ishizuka discloses the image processing device generating raster data from the image data on the basis of a drawing command, which reads on claimed line drawing command; as disclosed at column 4, lines 9-10." In the applicant's remarks, the applicant specifically points to a section in Ishizuka starting at col. 4, lines 46, where it explicitly states at col. 4, lines 52-55 that the system may extract pixels forming a line from a drawing command. Therefore, the drawing command is inherently a "line drawing command" as it drew a line. Whatever the system might do with the line is irrelevant to the limitation at hand; it is clear that the system is able to determine whether a drawing command is present that

forms a line object. As Ishizuka has been shown to read on the disputed limitation, the issue of whether other references might read on the limitation is moot. In addition, since no other reason has been provided to overcome the previous rejections, the rejections in this respect shall be maintained.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to WILLIAM C. STOREY whose telephone number is (571)270-3576. The examiner can normally be reached on Monday - Friday Eastern Standard Time.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, King Y. Poon can be reached on (571) 272-7440. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/William C Storey/

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